

**REMARKS**

Claims 164-221 were pending in the present application. The Examiner has rejected claims 164-221.

In the Office Action Made Final ("Final Office Action") dated February 8, 2005, the rejection of claims 164-221 is maintained under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,167,246 ("Elder") in view of U.S. Patent No. 4,710,970 ("Wu").

Applicants respectfully request that the Examiner reconsider the arguments and rebuttal evidence as set forth in the Response mailed October 14, 2004, consider the arguments and rebuttal evidence as set forth herein, and provide the following finds of fact so as to clarify any issues that may be ripe for appeal. The Response mailed October 14, 2004 is hereby incorporated by reference herein in its entirety.

**CLAIMS 164-221**

Applicants respectfully submit that any *one* of the following sets of argument and rebuttal evidence is reason enough to overcome the obviousness rejection still maintained by the Examiner. Applicants respectfully submit that the sum total of arguments and rebuttal evidence overwhelmingly makes the case for the traversal of the obviousness rejection.

***First Discussion: M.P.E.P. Prohibition Against Changing Principle of Operation***

*The Examiner failed to address this argument made in the Response dated October 14, 2004.* Applicants respectfully request that the Examiner respond directly to the prohibition against changing the principle operation of the prior art under M.P.E.P. § 2143.01 which is different from the prohibitions described in other sections.

There can be no argument that the Examiner has alleged that the motivation for combining Elder in view of Wu is "to provide a method for generating low noise, FM radio transmission signals with low harmonic distortion". See Final Office Action at 19.

It is clear that the components of FIGS. 1 and 2 of Elder, on which the Examiner relies heavily in supporting the obviousness rejection, are part of an AM receiver. See, e.g., the legend

of FIG. 1 which states "Fully Integrated CMOS AM Receiver". Thus, the principle operation of the AM receiver of Elder is to receive and to process AM radio signals. Nevertheless, the Examiner has proposed modifying the AM receiver of Elder to make a transmitter or transmission system that transmits FM radio signals.

*Clarification No. 1 Sought from Examiner:* Does not the Examiner agree that modifying the AM receiver illustrated in FIGS. 1 and 2 of Elder into an FM transmitter or into an FM transmission system, as alleged by the Examiner as the motivation for combining Elder and Wu, changes the principle of operation of the AM receiver?

*Clarification No. 2 Sought from Examiner:* Does not the Examiner agree that changing a system that operates on AM radio signals to a system that operates on FM radio signals is changing the principle of operation of the AM system?

*Clarification No. 3 Sought from Examiner:* Does not the Examiner agree that changing a receiver that operates as a receiver into a transmitter that operates as a transmitter or a transmission system that operates as a transmission system effectively changes the principle of operation of the receiver?

As the Examiner is well aware by now, such a modification is prohibited by the M.P.E.P. M.P.E.P. § 2143.01 which states that "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious". Thus, it is not merely Applicants' argument or allegation that the Examiner has presented an insufficient case of *prima facie* obviousness, but instead it is the M.P.E.P. that *mandates* such a conclusion.

M.P.E.P. § 2143.01 is very clear. If Applicants present rebuttal evidence and argument that satisfy the elements of an M.P.E.P. § 2143.01 determination, then the mandated conclusion under the authority of the M.P.E.P. is that "the teachings of the references are not sufficient to render the claims *prima facie* obvious". It is not merely Applicants' argument or allegation, it is the conclusion reached by the M.P.E.P. M.P.E.P. § 2143.01 takes into account the reasons alleged by the Examiner for modifying the AM receiver of Elder and concludes, as a matter of

patent examination procedure and practice, that if Applicants can prove via rebuttal evidence and argument that the principle of operation of the AM receiver of Elder has been changed, then the Examiner's stated reasons for modifying the AM receiver of Elder are not sufficient to render the claims *prima facie* obvious.

In other words, the mandated conclusion of M.P.E.P. § 2143.01 is that, even in view of the Examiner's reasons for modifying Elder in view of Wu, the teachings as alleged by the Examiner are not enough to even present a *prima facie* case of obviousness.

For at least the above reasons, it is respectfully requested that the obviousness rejection be withdrawn with respect to claims 164-221.

***Second Discussion: M.P.E.P. Prohibition Against Changing Principle of Operation***

*The Examiner failed to address this argument made in the Response dated October 14, 2004.* Applicants respectfully request that the Examiner respond directly to the prohibition against changing the principle operation of the prior art under M.P.E.P. § 2143.01 which is different in some aspects from the arguments already described above.

There can be no argument that the Examiner has chosen to FIGS. 1 and 2 of Elder and the components illustrated therein as the foundation of an obviousness rejection. There also can be no argument that FIGS. 1 and 2 of Elder illustrate an AM receiver. In order for the AM receiver of Elder illustrated in FIGS. 1 and 2 to render obvious the subject matter recited in claims 164-221, the AM receiver of Elder must be transformed (i.e., modified) into either a transmitter as set forth, for example, in claims 164-198 or a transmission system as set forth, for example, in claims 199-221. However, modifying the AM receiver of Elder which is illustrated in FIGS. 1 and 2 (actually it is illustrated in FIGS. 1-76) would change the principle of operation of the AM receiver of Elder since the AM receiver of Elder as modified by the Examiner would be a transmitter. Clearly, the AM receiver of Elder operates on a principle of receiving signals. On the other hand, the modified AM receiver as proposed by the Examiner would operate on a completely principle (i.e., to transmit signals).

As the Examiner is well aware by now, such a modification is prohibited by the M.P.E.P. M.P.E.P. § 2143.01 states that "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the

teachings of the references are not sufficient to render the claims *prima facie* obvious". Thus, it is not merely Applicants' argument that the Examiner has presented an insufficient case of *prima facie* obviousness, but the M.P.E.P. that *mandates* such a conclusion.

*Clarification No. 4 Sought From Examiner:* Does the Examiner not agree that modifying the AM receiver of Elder into a transmitter or transmission system changes the principle of operation of the AM receiver of Elder?

M.P.E.P. § 2143.01 is very clear. If Applicants present rebuttal evidence and argument that satisfy the elements of an M.P.E.P. § 2143.01 determination, then the mandated conclusion under the authority of the M.P.E.P. is that "the teachings of the references are not sufficient to render the claims *prima facie* obvious". It is not merely Applicants' argument or allegation, it is the conclusion reached by the M.P.E.P. M.P.E.P. § 2143.01 takes into account the reasons alleged by the Examiner for modifying the AM receiver of Elder and concludes, as a matter of patent examination procedure and practice, that if Applicants can prove via rebuttal evidence and argument that the principle of operation of the AM receiver has been changed, then the Examiner's stated reasons for modifying the AM receiver are not sufficient to render the claims *prima facie* obvious.

In other words, the mandated conclusion of M.P.E.P. § 2143.01 is that, even in view of the Examiner's reasons for modifying the AM receiver of Elder, the teachings as alleged by the Examiner are enough to even present a *prima facie* case of obviousness.

For at least the above reasons, it is respectfully requested that the obviousness rejection be withdrawn with respect to claims 164-221.

#### **M.P.E.P. Prohibition Against Modifying Prior Art**

Applicants respectfully request that the Examiner address the arguments made in this section separately from other arguments made above. Also, Applicants would like to respectfully draw the attention of the Examiner to the fact that this M.P.E.P. prohibition is different from the M.P.E.P. prohibitions discussed above.

There can be no argument that the Examiner has chosen to FIGS. 1 and 2 of Elder and the components illustrated therein as the foundation of an obviousness rejection. There also can be no argument that FIGS. 1 and 2 of Elder illustrate an AM receiver. In order for the AM receiver of Elder illustrated in FIGS. 1 and 2 to render obvious the subject matter recited in claims 164-221, the AM receiver of Elder must be transformed (i.e., modified) into either a transmitter as set forth, for example, in claims 164-198 or a transmitter system as set forth, for example, in claims 199-221. However, modifying the AM receiver of Elder which is illustrated in FIGS. 1 and 2 (actually it is illustrated in FIGS. 1-76) would render the AM receiver of Elder unsatisfactory for its intended purpose (i.e., to receive AM receiver signals).

As the Examiner is well aware by now, such a modification is prohibited by the M.P.E.P. M.P.E.P. § 2143.01 states that "[i]f the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification". Thus, it not merely Applicants' argument or allegation that there is no suggestion or motivation to make the proposed modification as alleged in the Final Office Action at page 18, but the M.P.E.P. that *mandates* such a conclusion.

*Clarification No. 5 Sought From Examiner:* Is not the Examiner bound by the mandated conclusion of M.P.E.P. § 2143.01 with respect to the proposed modification? Is the Examiner possibly confusing the mandated conclusion of M.P.E.P. § 2143.01 with a teaching away argument in which the Examiner has the leeway to weigh the totality of the circumstances? Does the Examiner not agree that modifying the AM receiver of Elder into a transmitter or transmission system would render the AM receiver unsatisfactory for its intended purpose as an AM receiver?

M.P.E.P. § 2143.01 is very clear. If Applicants present rebuttal evidence and argument that satisfy the elements of an M.P.E.P. § 2143.01 determination, then the mandated conclusion under the authority of the M.P.E.P. is that "there is not suggestion or motivation to make the proposed modification". It is not merely Applicants' argument, it is the conclusion reached by the M.P.E.P. This conclusion is reached even if the Examiner alleges a suggestion or motivation for the proposed modification.

In other words, if Applicants can meet the substantial threshold of demonstrating by rebuttal evidence and argument that the proposed modification would render the prior art unsatisfactory for its intended purpose, then, even though the Examiner alleges a suggestion or motivation for the proposed modification in an alleged *prima facie* case, the M.P.E.P., as a matter of patent examination procedure and practice, supersedes the Examiner's reasons for the proposed modification and, instead, concludes that there is no suggestion or motivation for the proposed modification.

For at least the above reasons, it is respectfully requested that the obviousness rejection be withdrawn with respect to claims 164-221.

#### Claims 164-181

Claim 164 recites the following:

164. (Previously Presented) A complimentary metal oxide semiconductor (CMOS) integrated circuit, comprising:  
a transmitter including,  
a tunable oscillator having a tuning input,  
a mixer having a first input coupled the oscillator, a second input,  
and an output, and  
a phase detector having a first input coupled to the mixer output, a  
second input, and an output coupled to the tuning input; and  
a local oscillator coupled to the second input of the mixer.

Thus, claim 164 recites, in part, a transmitter including a tunable oscillator, a mixer, a phase detector and a local oscillator. Elder in view of Wu does not teach each and every element as set forth in claim 164.

In the Final Office Action, the Examiner alleges that Elder teaches a transmitter including a tunable oscillator, a mixer and a local oscillator. In support of such an allegation that Elder teaches such a transmitter, the Examiner cites the following:

The receiver uses a novel architecture that allows the receiver to demodulate signals over a wide RF band, which eliminates the need for manual tuning. This is referred to as a swept LO mode. This also significantly relaxes the frequency accuracy and stability requirements of the Transmitter, allowing the receiver to be compatible with both SAW-based and LC-based transmitters.

Elder at col. 1, lines 37-43. Applicants respectfully draw the attention of the Examiner to the fact that, although the cited text does mention "SAW-based and LC-based transmitters", the cited text is describing "the receiver [that] uses a novel architecture that allows the receiver to demodulate signals over a wide RF band". Elder at col. 1, lines 37-38. The cited text does not further elaborate on the components of the transmitter. Thus, Elder at col. 1, lines 37-43 does not teach a transmitter including a tunable oscillator, a mixer and a local oscillator.

In the Final Office Action, the Examiner alleges that Elder teaches a transmitter including a tunable oscillator, a mixer and a local oscillator. In support of such an allegation that Elder teaches such a transmitter, the Examiner cites the following:

The Local Oscillator 9 (LO) can be operated in either fixed mode or swept mode, selectable via a DC control line SWEN. Fixed mode operation is preferred for precision or high-performance applications.

In Swept mode, the LO frequency is varied across a range of frequencies at a rate sufficiently higher than the data rate to allow for peak (envelope) detection. This mitigates the requirement for an accurately controlled and/or age and temperature stabilized transmitter carrier frequency.

Elder at col. 3, lines 27-35. Applicants respectfully draw the attention of the Examiner to the fact that, although the cited text does mention novel aspects of the receiver "mitigates the requirement for an accurately controlled and/or age and temperature stabilized transmitter carrier frequency", the cited text relates to the receiver and, in particular, the receiver component 9 which is a local oscillator found on FIG. 1 of Elder entitled "Fully Integrated CMOS AM Receiver". Elder at col. 3, lines 33-35. The cited text does not describe the transmitter at all, instead, the cited text describes a transmitter carrier frequency. The cited text is silent as to the components or configuration of a transmitter. Thus, Elder at col. 3, lines 27-35 does not teach a transmitter including a tunable oscillator, a mixer and a local oscillator.

Accordingly, the Examiner has not even presented a *prima facie* case of obviousness. In addition, since the teaching deficiencies of Elder are not entirely made up by the teachings of Wu, the obviousness rejection with respect to claim 164 cannot be maintained.

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be withdrawn with respect to claim 164 and its dependent claims (i.e., claims 165-181).

Claims 182-198: Subsampling Mixer

Claim 182 recites, in part, a transmission system comprising a transmitter including a tunable oscillator, a **subsampling mixer**, a phase detector and a local oscillator.

*Clarification No. 6 Sought From Examiner:* Where do any of the cited references (i.e., Elder or Wu) describe, illustrate or teach a **subsampling mixer**?

Applicants respectfully submit that neither Elder nor Wu, individually or combined, teaches a **subsampling mixer** as set forth in claim 182. Since neither Elder nor Wu, individually or combined, teaches each and every element as set forth in claim 182, neither Elder nor Wu, individually or combined, renders obvious the subject matter as set forth in claim 182 and its dependent claims (i.e., claims 183-198).

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be withdrawn with respect to claim 182 and its dependent claims (i.e., claims 183-198).

Applicants respectfully submit that similar arguments as were made with respect to claim 164 concerning a transmitter are made here, if applicable, with respect to claim 182 concerning a transmission system comprising a transmitter. The Final Office Action states that FIGS. 1 and 2 teach such a transmission system. See Final Office Action at page 7. However, this is inaccurate. "FIG. 1 is a block diagram of a single chip receiver in accordance with one embodiment of the invention". Elder at col. 2, lines 3-4. In fact, the title of FIG. 1 is "Fully Integrated CMOS AM Receiver". "FIG. 2 provides additional detail of the LO Sweep Generator". Elder at col. 2, lines 5-6. In fact, the title of FIG. 2 is "LO Sweep Generator 9, 9a Subsystem". Thus, FIG. 2 only provides more detail as to the LO 9 and the LO Sweep Generator 9a of the AM Receiver illustrated in FIG. 1. Thus, FIGS. 1 and 2 do not teach a transmission system and certainly do not teach a transmitter with, for example, a tunable oscillator, a subsampling mixer, a phase detector and a local oscillator. In fact, FIGS. 1 and 2 do not illustrate any transmitter components. Instead, FIGS. 1 and 2 illustrate components of an AM receiver. Thus, FIGS. 1 and 2 do not teach a transmission system and certainly do not teach a transmitter with, for example, a tunable oscillator, a subsampling mixer, a phase detector and a



local oscillator. In fact, FIGS. 1 and 2 do not illustrate a transmitter or any components of a transmitter. Thus, the Examiner has failed to provide even a *prima facie* case of obviousness.

In addition, the Examiner alleges that particular texts cited in Elder teach a transmission system comprising a transmitter including, for example, a tunable oscillator, a subsampling mixer, a phase detector and a local oscillator. As discussed above, the cited texts do not teach a transmitter as set forth in claim 164 and the cited texts do not teach a transmission system comprising a transmitter as set forth in claim 182. In fact, one of the cited texts merely mentions "SAW-based and LC-based transmitters" without further elaboration and the other cited text does not even describe a transmitter or transmitter components at all (instead merely describing a transmitter carrier frequency).

Accordingly, the Examiner has not even presented a *prima facie* case of obviousness. In addition, since the teaching deficiencies of Elder are not entirely made up by the teachings of Wu, the obviousness rejection with respect to claim 182 cannot be maintained.

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be withdrawn with respect to claim 182 and its dependent claims (i.e., claims 183-198).

#### Claims 199-210

Applicants respectfully submit that similar arguments as were made with respect to claim 164 concerning a transmitter are made here, if applicable, with respect to claim 199 concerning a transmitter system. Claim 199 recites, in part, "[a] complimentary metal oxide semiconductor (CMOS) transmitter system" comprising first oscillator means, mixer means, detector means and second oscillator means. The Final Office Action states that FIGS. 1 and 2 teach such a CMOS transmitter system. See Final Office Action at page 11. However, this is inaccurate. As discussed above, FIGS. 1 and 2 do not illustrate a transmission system as set forth in claim 182 and certainly do not illustrate a transmitter system as set forth in claim 199. Furthermore, no transmitter system components are illustrated. Instead, FIGS. 1 and 2 illustrate components of an AM receiver. Thus, FIGS. 1 and 2 do not teach a CMOS transmitter system and certainly do not teach a CMOS transmitter system with, for example, first oscillator means, mixer means, detector means and second oscillator means. In fact, FIGS. 1 and 2 do not illustrate a transmitter system or any components of a transmitter system. Instead, FIGS. 1 and 2 illustrate receiver

components of an AM receiver. Thus, the Examiner has failed to provide even a *prima facie* case of obviousness.

In addition, the Examiner alleges that particular texts cited in Elder teach a CMOS transmitter system comprising, for example, first oscillator means, mixer means, detector means and second oscillator means. As discussed above with respect to claim 164, the cited texts do not teach a transmitter as set forth in claim 164 and do not teach a CMOS transmitter system as set forth in claim 199. In fact, one of the cited texts merely mentions "SAW-based and LC-based transmitters" without further elaboration and the other cited text does not even describe a transmitter or transmitter components at all (instead merely describing a transmitter carrier frequency).

Accordingly, the Examiner has not even presented a *prima facie* case of obviousness. In addition, since the teaching deficiencies of Elder are not entirely made up by the teachings of Wu, the obviousness rejection with respect to claim 199 cannot be maintained.

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be withdrawn with respect to claim 199 and its dependent claims (i.e., claims 200-210).

#### Claims 211-221

Applicants respectfully submit that similar arguments as were made with respect to claim 164 concerning a transmitter are made here, if applicable, with respect to claim 211 concerning a transmitter system. Claim 211 recites, in part, a transmitter system comprising first oscillator means, mixer means, filter means, detector means and second oscillator means. The Final Office Action states that FIGS. 1 and 2 teach such a transmitter system. See Final Office Action at page 15. However, this is inaccurate. As discussed above, FIGS. 1 and 2 do not illustrate a transmission system as set forth in claim 182 and certainly do not illustrate a transmitter system as set forth in claim 211. Furthermore, no transmitter system components are illustrated. Instead, FIGS. 1 and 2 illustrate components of an AM receiver. Thus, FIGS. 1 and 2 do not teach a transmitter system and certainly do not teach a transmitter system with, for example, first oscillator means, mixer means, filter means, detector means and second oscillator means. In fact, FIGS. 1 and 2 do not illustrate a transmitter system or any components of a transmitter

system. Instead, FIGS. 1 and 2 illustrate receiver components of an AM receiver. Thus, the Examiner has failed to provide even a *prima facie* case of obviousness.

In addition, the Examiner alleges that particular texts cited in Elder teach a transmitter system comprising, for example, first oscillator means, mixer means, filter means, detector means and second oscillator means. As discussed above with respect to claim 164, the cited texts do not teach a transmitter as set forth in claim 164 and do not teach a transmitter system as set forth in claim 211. In fact, one of the cited texts merely mentions "SAW-based and LC-based transmitters" without further elaboration and the other cited text does not even describe a transmitter or transmitter components at all (instead merely describing a transmitter carrier frequency).

Accordingly, the Examiner has not even presented a *prima facie* case of obviousness. In addition, since the teaching deficiencies of Elder are not entirely made up by the teachings of Wu, the obviousness rejection with respect to claim 211 cannot be maintained.

It is therefore respectfully requested that the obviousness rejection be withdrawn with respect to claim 211 and its dependent claims (i.e., claims 212-221).


### CONCLUSION

In view of at least the foregoing, it is respectfully submitted that the pending claims 164-221 are in condition for allowance. Should anything remain in order to place the present application in condition for allowance, the Examiner is kindly invited to contact the undersigned at the below-listed telephone number.

Please charge any required fees not paid herewith or credit any overpayment to the Deposit Account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Dated: April 8, 2005

Respectfully submitted,

  
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